4. (Amended) The method of claim 6, wherein the physiological response comprises vasoconstriction.

5. (Amended) The method of claim 6, wherein the physiological response comprises reduction in blood flow out of a breached vessel.

6. (Amended) A method for achieving at least a transient, localized, modulation of vascular structure and/or function, comprising:

topically administering to a patient in need of said modulation, a sufficient amount of material comprising semi-crystalline poly-β-1→4 N-acetylglucosamine polymers, wherein the poly-β-1→4 N-acetylglucosamine polymer comprises about 50 to about 150,000 N-acetylglucosamine monosaccharides covalently attached in a β-1→4 conformation, and said polymer has a molecular weight of about 10,000 daltons to about 30 million daltons, and wherein said sufficient amount achieves at least a transient, localized physiological response selected from the group consisting of stimulation of endothelin-1 release, vasoconstriction, and reduction in blood flow out of a breached vessel,

whereby the patient experiences at least a transient, localized modulation of vascular structure and/or function.

7. (Amended) The method of claim 6, wherein the poly-β-1→4 N-acetylglucosamine polymer comprises about 50 to about 50,000 N-acetylglucosamine monosaccharides covalently attached in a β-1→4 conformation, and said polymer has a molecular weight of about 10,000 daltons to about 10 million daltons.

10. (Amended) The method of claim 6, wherein the semi-crystalline poly-β-1→4 N-acetylglucosamine polymer comprises at least one non-acetylated glucosamine monosaccharide unit, and wherein at least 40% of said glucosamine monosaccharide units are N-acetylated.

11. (Amended) The method of claim 6, wherein the patient is a human.

12. (Amended) The method of claim 6, wherein the material is in the form of a gel, sponge, film, membrane, foam, spray, emulsion, suspension, or solution.

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13. (Amended) The method of claim 6, wherein the material is applied directly to a blood vessel.

B3 concld

14. (Amended) The method of claim 6, wherein the vascular structure is a blood vessel selected from the group consisting of capillary, vein, and artery.

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17. (Amended) The method of claim 6, wherein the extent of the transient, localized modulation of vascular structure and/or function is substantially proportional to the amount of semi-crystalline poly-β-1→4 N-acetylglucosamine administered.

24. (Amended) A method for treating a patient having a vascular disorder, comprising:

topically administering to a patient in need of such treatment, a sufficient amount of material comprising semi-crystalline poly-β-1→4 N-acetylglucosamine polymers, wherein the poly-β-1→4 N-acetylglucosamine polymer comprises about 50 to about 150,000 N-acetylglucosamine monosaccharides covalently attached in a β-1→4 conformation, and said polymer has a molecular weight of about 10,000 daltons to about 30 million daltons, and wherein said sufficient amount achieves at least a transient, localized physiological response selected from the group consisting of stimulation of endothelin-1 release, vasoconstriction, and reduction in blood flow out of a breached vessel, whereby the patient experiences at least a transient, localized modulation of vascular structure and/or function,

B5

whereby said administering ameliorates said vascular condition.

26. (Amended) The method of claim 6, wherein said polymers are substantially free of protein.

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27. (Amended) The method of claim 6, wherein said polymers are substantially free of organic contaminants.

Bd Concld

28. (Amended) The method of claim 6, wherein said polymers are substantially free of inorganic contaminants.